## CLAIMS

What is claimed follows:

1. A stereoscopic liquid crystal eyewear system comprising:

liquid crystal eyewear for viewing an image; and

an electronic circuit including a coordination circuit portion and a transmitter circuit portion,

wherein the coordination circuit portion provides a delay to accommodate the switching time and latency of the liquid crystal eyewear, and

wherein the transmitter circuit portion generates a signal for transmission to the liquid crystal eyewear.

2. The system of claim 1, wherein the delay is for about 150 $\mu$S.

3. The system of claim 1, wherein the transmission is a wireless transmission.

4. The system of claim 3, wherein the wireless transmission is an infrared wireless transmission.

5. The system of claim 4, wherein the infrared wireless transmission includes the generation of light pulses for about 60 $\mu$S or less.

6. The system of claim 4, wherein infrared signals produced to provide the infrared wireless transmission are sufficiently spaced apart and have a duration sufficiently short to avoid interfering with infrared equipment that uses infrared signals lasting hundreds of milliseconds.

7. The system of claim 6, wherein the infrared equipment includes an infrared remote control.

8. The system of claim 3, further comprising plural infrared transmitters to generate the infrared wireless transmission.

9. The system of claim 8, wherein at least two of the plural infrared transmitters are positioned to have different fields of view.

10. The system of claim 1, wherein the liquid crystal eyewear alternate states and a timing of the alternating states is periodically synchronized to a synchronization signal.

11. The system of claim 1, wherein the electronic circuit further includes another circuit portion to filter a synchronization signal.

12. The system of claim 11, wherein the another circuit portion includes a transistor.

13. The system of claim 11, further comprising internal and external oscillators, the external oscillator is external to the electronic circuit and helps to generate the synchronization signal which is coupled to the another circuit portion.

14. The system of claim 11, wherein the electronic circuit has an internal oscillator and receives the synchronization signals without filtering.

15. The system of claim 1, wherein the liquid crystal eyewear uses liquid crystal driving voltages of kX and -X, wherein k is a non-zero constant and X is a non-zero voltage.

16. The system of claim 15, wherein $k = 2$ and $X = \pm 5$.

17. The system of claim 15, wherein the net applied voltage is 0.

18. The system of claim 1, wherein the delay includes transmission time through the electronic circuit.

19. The system of claim 1, wherein a circuit for driving liquid crystal eyewear is part of a frame of the liquid crystal eyewear.

20. A method of controlling stereoscopic liquid crystal eyewear comprising:

periodically altering a transmissive state of the stereoscopic eyewear, a timing of the periodically altering the transmissive state of the stereoscopic eyewear corresponding to a first synchronizing signal;

monitoring a second synchronizing signal to determine a period of the second synchronization signal;

subtracting a latency of the liquid crystal eyewear from the period to determine a switching interval; and

transmitting a first synchronizing signal to control the timing of the periodically altering of the periodically altering the transmissive state of the stereoscopic eyewear,

wherein the first synchronizing signal is determined in accordance with the switching interval.

21. The method of claim 20, wherein transmitting a second synchronizing signal is substantially the first synchronizing signal with a time delay substantially equal to the switching interval.

22. A control circuit for controlling light shutters used to view stereoscopic images, comprising

a signal source providing a synchronizing signal representative of the presenting of left and right eye images for selective viewing to provide a stereoscopic view,

a time shifter to shift the timing of the synchronizing signal to compensate for latency characteristics.

23. The circuit of claim 22, wherein the latency characteristics are in at least one of the light shutters and circuitry used to operate light shutters.

24. The circuit of claim 22, wherein the time shifter advances the synchronizing signal or a signal produced based on the synchronizing signal to commence operation of at least one of the operation of the light shutters and circuitry used to operate the light shutters.

25. The circuit of claim 22, wherein the signal source is a periodic waveform and the time shifter subtracts from the periodic waveform time at which sequential transitions occur in the periodic waveform so the advanced transitions occur to cause light shutters to be ready to transmit or to block light, respectively, according to timing of the availability of a respective image for viewing.

26. The circuit of claim 25, wherein the subtracted amount of time is from about several microseconds to several hundred microseconds.

27. The circuit of claim 22, further comprising a signal sharpening circuit for sharpening the synchronizing signal to closely approximate a square wave.

28. The circuit of claim 22, wherein the time shifter comprises a micro controller.

29. The circuit of claim 28, further controlling an oscillator for supplying a periodic input to the micro controller for stepping the micro controller through its

programmed functions to subtract time from the synchronizing signal for delivery of an output to shutters.

30. The circuit of claim 28, wherein the micro controller includes a timer operative based on a periodic input to determine whether it is logical that a received signal is the synchronization signal providing transitions when expected.

31. The circuit of claim 30, further comprising an oscillator for providing a timing input to the micro controller.

32. The circuit of claim 22, wherein the time shifter comprises a micro controller and a multiplexer/demultiplexer.

33. The circuit of claim 32, further comprising a voltage increasing circuit providing a voltage for delivery by the multiplexer/demultiplexer to shutters to provide power selectively to operate the shutters sequentially.

34. The circuit of claim 33, wherein the micro controller controls operation of the multiplexer/demultiplexer sequentially to provide power to operate respective shutters.

35. The circuit of claim 22, wherein a VGA circuit card provides input to the circuit, including power and synchronization signals.

36. A viewing system for viewing a sequence of left eye images and right eye images to provide a stereoscopic view, comprising light shutters for sequentially transmitting sequential images for viewing, respectively, by a left eye and right eye of a user, and the circuitry of claim 21.

37. The system of claim 36, the shutters comprising liquid crystal shutters.

38. The system of claim 37, wherein the shutters are mounted in a frame for positioning on the head of a user.

39. The system of claim 37, further comprising a photodetector for detecting signals from the circuit for controlling operation of the shutters.

40. The system of claim 39, the photodetector comprising an infrared sensing photodetector.

41. The system of claim 39, wherein the circuit includes a light emitter for providing light pulses for detection by the photodetector.

42. The system of claim 41, wherein the light emitter provides such light pulses in relation to the time shifted synchronization signal.

43. The system of claim 41, wherein the light emitter comprises two light emitting diodes.

44. The system of claim 43, wherein the circuit comprises a charge storage circuit for delivering signals to the light emitting diodes to produce sharp fast light pulses in correlation to the time shifted synchronization signal.

45. The system of claim 37, wherein the time shifter subtracts from the timing of the synchronization signal time to account for latency in at least one of the shutters and transmission time for a signal to be provided to at least one of the shutters to cause a change in the light transmitting or light blocking state thereof.

46. The system of claim 45, wherein the shutters are liquid crystal shutters and further comprising a least one light emitting diode for transmitting light to a photosensor associated with the liquid crystal shutters to cause synchronization of the liquid crystal shutters with the time shifted synchronization signal.

47. The system of claim 46, wherein the subtracted amount of time accounts for latency in the liquid crystal shutters and the operation of the at least one light emitting diode or detection of light from the light emitting diode.

48. The system of claim 46, wherein the light emitting diode is an infrared emitting light emitting diode and the photosensor senses infrared electromagnetic energy.

49. The system of claim 45, wherein the time shifter precludes delivering of signals to synchronize or to control the shutters until at least an adequate amount of time has expired in relation to the duration of respective images presented for viewing through the respective shutters.

50. The system of claim 36, further comprising a light emitting diode to provide light output pulses for synchronizing operation or for operating at least one shutter, and further comprising a charge storage circuit for delivering signals to the light emitting diode to produce sharp fast light pulses in correlation to the time shifted synchronization signal.

51. The system of claim 36, further comprising a noise rejection circuit to preclude unexpected signals from causing an output to the shutters.

52. The system of claim 36, wherein signals based on the operation of the time shifter are provided by wire connection to the shutters to operate the shutters in time synchronization with the providing of respective left and right eye images for viewing through respective shutters.

53. The system of claim 36, wherein the shutters are in a mounting structure, an operating circuit and power source are mounted with respect to the mounting structure, a photosensor is mounted with respect to the mounting structure and provides input to the circuit to control operation of the shutters, and a wireless source provides a signaling function to the photosensor to operate the shutters based on signals developed in the control circuit.

54. The system of claim 53, wherein the operating circuit comprises a switch, and wherein the photosensor provides an input to the switch to cause operation of the shutters sequentially to transmit light and to block light transmission.

55. The system of claim 53, wherein the wireless source comprises an infrared source.

56. The system of claim 53, wherein the mounting structure is a head mount frame.

57. The system of claim 53, wherein the mounting structure is an eyeglasses frame.

58. The system of claim 53, wherein the shutters are liquid crystal shutters.

59. The system of claim 36, wherein the time shifter comprises a micro controller and a multiplexer/demultiplexer.

60. The system of claim 59, further comprising a voltage increasing circuit providing a voltage for delivery by the multiplexer/demultiplexer to shutters to provide power selectively to operate the shutters sequentially.

61. The System of claim 60, wherein the micro controller controls operation of the multiplexer/demultiplexer sequentially to provide power to operate respective shutters.

62. The system of claim 36, wherein a VGA circuit card provides input to the circuit, including power and synchronization signals.

63. A circuit for supplying signals to operate shutters sequentially to provide selective transmission and blocking of images for sequential viewing to provide a stereoscopic images, comprising

a controller producing a time shifted periodic signal based on an input synchronization signal,

a multiplexer/demultiplexer responsive to an output from the controller for sequentially providing power signals to operate respective shutters for such viewing stereoscopic images.

64. The circuit of claim 63, further comprising a voltage increaser for increasing the magnitude of the power signals.

65. The circuit of claim 64, further comprising a connection to a computer to receive from the computer power and synchronization signals, and wherein the voltage increaser is a voltage doubler that increases such power signal for delivery via the multiplexer/demultiplexer to the shutters.

66. The circuit of claim 63, wherein the controller is a micro controller and the micro controller is coupled to control timed operation of the multiplexer/demultiplexer to operate the shutters.

67. The circuit of claim 63, wherein the micro controller and multiplexer/demultiplexer are coordinated to provide a net DC voltage of zero volts to avoid polarizing the shutters.

68. The circuit of claim 63, wherein a VGA circuit card provides input to the circuit, including power and synchronization signals.

69. A viewing system for viewing a sequence of left eye images and right eye images to provide a stereoscopic view, comprising light shutters for sequentially transmitting sequential images for viewing, respectively, by a left eye and right eye of a user, and the circuitry of claim 2 for providing power to operate the light shutters.

70. The system of claim 69, wherein the controller and multiplexer/demultiplexer are coordinated to provide a net DC voltage of zero volts to avoid polarizing the shutters.

71. The system of claim 69, wherein a VGA circuit card provides input to the circuit, including power and synchronization signals.

72. A modular system for viewing stereoscopic images characterized in that an image source provides sequentially images for viewing respectively by the respective eyes of a viewer to create the impression of a stereoscopic view, selectively operable shutters to transmit or to prevent transmission of images, a signal source provides synchronization signal for synchronizing the shutters, and a wired or wireless connection is provided to the shutters for operation thereof in response to such synchronization.

73. The system of claim 72, further characterized in that the signals provided the shutters are advanced to accommodate latency characteristics of at least part of the system.

74. The system of claim 72, further characterized in that the shutters are in a head mounted support, a receiver is associated with the shutters to receive signals from a transmitter representing the synchronization signal to operate the shutters in coordination with the respective images provided for viewing.

75. The system of claim 74, further characterized in that the signals provided the shutters are advanced to accommodate latency characteristics of at least part of the system.

76. The system of claim 74, further comprising a battery and a power circuit for delivering power to respective shutters under controlled operation by the signal received by the receiver.

77. The system of claim 76, wherein the transmitter transmits infrared light, and the photosensor detects such infrared light.

78. The system of claim 74, further characterized in that a free running circuit operates the shutters and the signal detected by the photosensor provides for synchronization of the shutters with respect to respective left and right eye view displayed images.

79. The system of claim 74, further characterized in that the duty cycle of synchronization signals from the transmitter is significantly shorter than the duty cycle of television infrared remote control devices.

80. The system of claim 72, further characterized in comprising a display for presenting the images.

81. The system of claim 80, further characterized in comprising an image source.

82. The system of claim 81, further characterized in that the image source is provided via a network.

83. The system of claim 81, further characterized in that the image source is provided by a gaming electronic device.

84. The system of claim 81, further characterized in that the image source is provided by a television.

85. The system of claim 81, further characterized in that the image source is a computer.

86. The system of claim 80, further characterized in that the duration of respective signals to the photosensor is of substantially shorter duration than infrared control signals for television apparatus.

87. The system of claim 86, further characterized in that the respective signals to the photosensor are on the order of about 60 microseconds duration.

88. The system of claim 87, further characterized in that the respective signals to the photosensor are provided at a frequency of occurrence of on the order of about three such signals in each five hundred millisecond time period.

89. The system of claim 72, further characterized in that for a wired connection the wire provides power signals to both the shutters for selective operation thereof.

90. Apparatus for providing signals to synchronize light shutters for viewing of stereoscopic images from a video source, comprising

a device to obtain field information from a video signal provided by a video source, wherein such field information provides coordination to the particular field of a multiple field image for display,

a controller responsive to the field information provided by the stripper to provide synchronization of light shutters to control delivery of respective images to respective eyes of a viewer.

91. The apparatus of claim 90, wherein the controller comprises a micro controller, further comprising an oscillator for providing an input to the micro controller.

92. The apparatus of claim 91, further comprising an infrared light source for providing infrared signals to a receiver in synchronism with the signals from the micro controller and field information, the receiver providing input to synchronize the shutters.

93. The apparatus of claim 92, further comprising a free running circuit to provide power to the respective shutters and wherein the receiver controls delivery of signals from the free running circuit to the respective shutters.

94. The apparatus of claim 91, further comprising a wired connection from the controller to the shutters to provide power to operate the shutters.

95. The apparatus of claim 90, wherein the synchronization is characterized in being adjusted to provide an advance in the timing thereof to reduce latency effects.

96. Apparatus for providing control signals to light shutters for operation to view stereoscopic images, comprising

a first infrared light emitting source to provide coordination signals to a receiver associated with shutters, and

a further infrared light emitting source to increase the area of coverage by infrared light to allow increase the area in which the stereoscopic images can be viewed.

97. The apparatus of claim 96, further comprising a synchronization signal source for causing operation of the infrared light emitting sources in synchronism with respective image portions of a stereoscopic image to provide for viewing of such images via the respective shutters.

98. A stereoscopic viewing system for viewing stereoscopic images provided by a source, comprising

a pair of light shutters to control delivery of respective left and right eye images for viewing as a stereoscopic image provided by an image source,

a free running drive circuit for driving the respective light shutters,

a control circuit responsive to a prescribed input for synchronizing operation of the light shutters, and

a detector for detecting incoming coded signals representing a prescribed operation of the control circuit to operate the shutters for viewing a stereoscopic image.

99. The system of claim 98, wherein the control circuit comprises a programmed application specific circuit.

100. The system of claim 98, wherein the controller includes a timer function to shut down the free running drive circuit in the absence of the controller receiving an input from the detector.

101. The system of claim 100, wherein the prescribed input is a digital word.

102. The system of claim 98, wherein the controller is responsive to the prescribed input to operate the correct respective shutter in coordination with the coded signals representative of characteristics of the image.

103. The system of claim 102, wherein the controller is responsive to shut down the shutters and the free running drive circuit in response to a prescribed input.

104. The system of claim 102, wherein the controller is responsive to maintain open both shutters in response to a prescribed input for viewing a non-stereoscopic image.

105. The system of claim 102, wherein the controller is responsive to a prescribed input to operate the shutters for timing according to the timing of video signals providing the respective stereoscopic images.

106. The system of claim 105, wherein the timing is for a PAL video signal timing format or an NTSC video signal timing format.

107. The system of claim 102, wherein the coded signals are at least one of number of pulses, duration of respective pulses, and timing of pulses.

108. Apparatus for detecting characteristics of computer images and controlling a display and light shutters for viewing of such images, comprising

a detector for comparing signals representing two different colors and a reference to determine whether image signals are provided in stereoscopic pairs or planar,

a display controller for controlling delivery of such image signals to a display in a format according to the detector response, and

an output for selectively controlling light shutters for viewing stereoscopic images or planar images.

109. The apparatus of claim 108, wherein the detector compares red and green signals with a reference voltage.

110. The apparatus of claim 108, wherein the apparatus receives digital input signals and includes a digital to analog converter to provide signals for synchronous operation of the light shutters.

111. The apparatus of claim 108, wherein the apparatus receives digital input signals and includes a digital to analog converter to provide power for delivery to the light shutters to operate the light shutters for viewing respective stereoscopic or planar images.

112. The apparatus of claim 108, wherein the apparatus receives a vertical sync signal from an image providing source, and further comprising a further vertical sync generating device to generate an additional vertical sync signal to provide for spreading of images that are provided in a compressed format.

113. The apparatus of claim 112, wherein the compressed format is over and under, and wherein the vertical sync signal and the additional vertical sync signal are provided to spread the image over the display as respective sequentially provided opposite eye images for viewing by via the light shutters.

114. The apparatus of claim 112, further comprising a line blanker to blank selected lines of the display during image spreading operation.

115. A display system for displaying planar or stereoscopic images, comprising a display, a computer for providing image signals for display by the display, light shutters for viewing or blocking view of respective images presented on

the display to allow viewing of planar or stereoscopic images, and the circuit of claim 108 to respond to signals from the computer to provide displayed images while coordinating operation of the light shutters for viewing of the images.